

What is claimed is:

1 1. A system for extending in length a connection from a  
2 universal serial bus (USB) peripheral device to a computer beyond  
3 the length enabled by the device hardware, the system comprising:

4 a) a USB host emulator, for polling the USB peripheral device  
5 according to a USB standard protocol, for receiving input  
6 provided by the USB peripheral device in response to the  
7 polling, for providing the input in a form suitable for  
transmission via a communications channel

9 b) the communications channel, having an input end and an output  
10 end, responsive to the input at the input end, for providing  
11 the input at the output end;

12 c) a USB device emulator, responsive to the input at the output  
13 end of the communications channel, and further responsive to  
14 polling from the computer, and in response to the polling,  
15 for reforming the input into USB format and providing the USB  
16 formatted input to the computer according to a USB protocol.

2 2. A system as in claim 1, wherein the USB host emulator further  
comprises:

3 ~~a) a USB transceiver, for bi-directionally coupling a glue logic~~  
4 ~~module to the USB peripheral device so as to allow polling~~  
5 ~~the USB peripheral device and to allow receiving a report~~  
6 ~~packet provided by the USB peripheral device in response to~~  
7 ~~the polling, the USB transceiver for providing physical~~  
8 ~~interfacing, according to a USB standard, of the attached USB~~  
9 ~~device to the glue logic module;~~

- a
- b) the glue logic module, such as a field programmable gate array, for interfacing the USB transceiver to a control processor;
- b
- c) a control processor, for polling the USB peripheral device and for receiving a report packet provided by the USB peripheral device in response to the polling, and further for providing the report packet information in serialized form;
- c
- d) a serial peripheral interface (SPI) universal asynchronous receiver/ transmitter (UART), serving as a bus for serial data transmission, for applying the serialized report packet information to a communications port; and
- d
- e) the communications port, for applying the serialized report packet information received from the SPI UART to the communications channel.

3. A system as in claim 1, wherein the USB device emulator further comprises:

- a) a communications port, for receiving the serialized report packet information received from the SPI UART to the communications channel;
- b) a serial peripheral interface (SPI) universal asynchronous receiver/ transmitter (UART), serving as a bus for serial data transmission, for communicating the serialized report packet information to a control processor;
- c) the control processor, for receiving and storing the serialized report packet information, responsive to polling from the host computer, for providing the report packet information in packetized format in response to the polling;

- 14 d) the glue logic module, such as a field programmable gate  
15 array, for interfacing the control processor to a USB  
16 transceiver; and
- 17 e) the USB transceiver, for bi-directionally coupling the glue  
18 logic module to the host computer so as to allow polling of  
19 the USB peripheral device and to allow providing a report  
20 packet provided by the USB peripheral device in response to  
21 the polling, the USB transceiver for providing physical  
22 interfacing, according to a USB standard, of the host  
23 computer to the glue logic module.

4. A system as in claim 1, wherein the form suitable for  
transmission via the communications channel is a serialized form.

5. A system as in claim 1, wherein the form suitable for  
transmission via the communications channel is a form used for  
radiofrequency communications, such as a spread spectrum form.